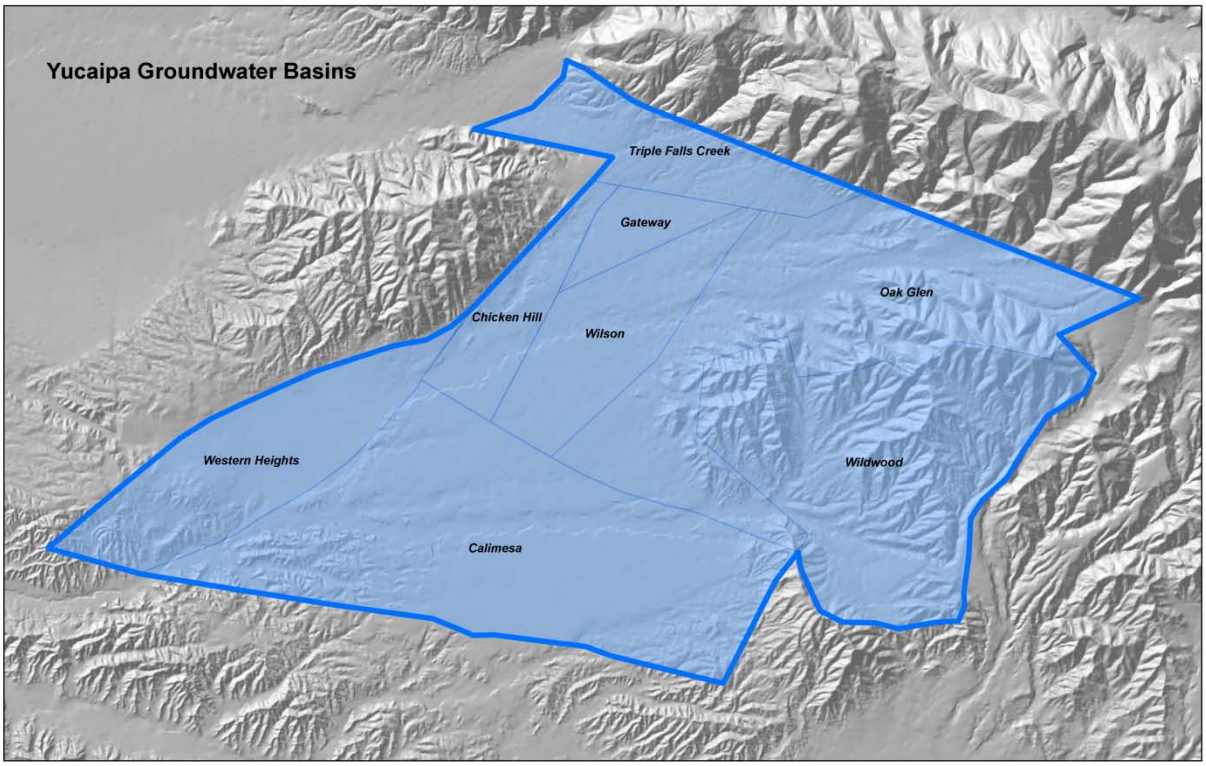
Attachment 5 Work Plan

Purpose and Need

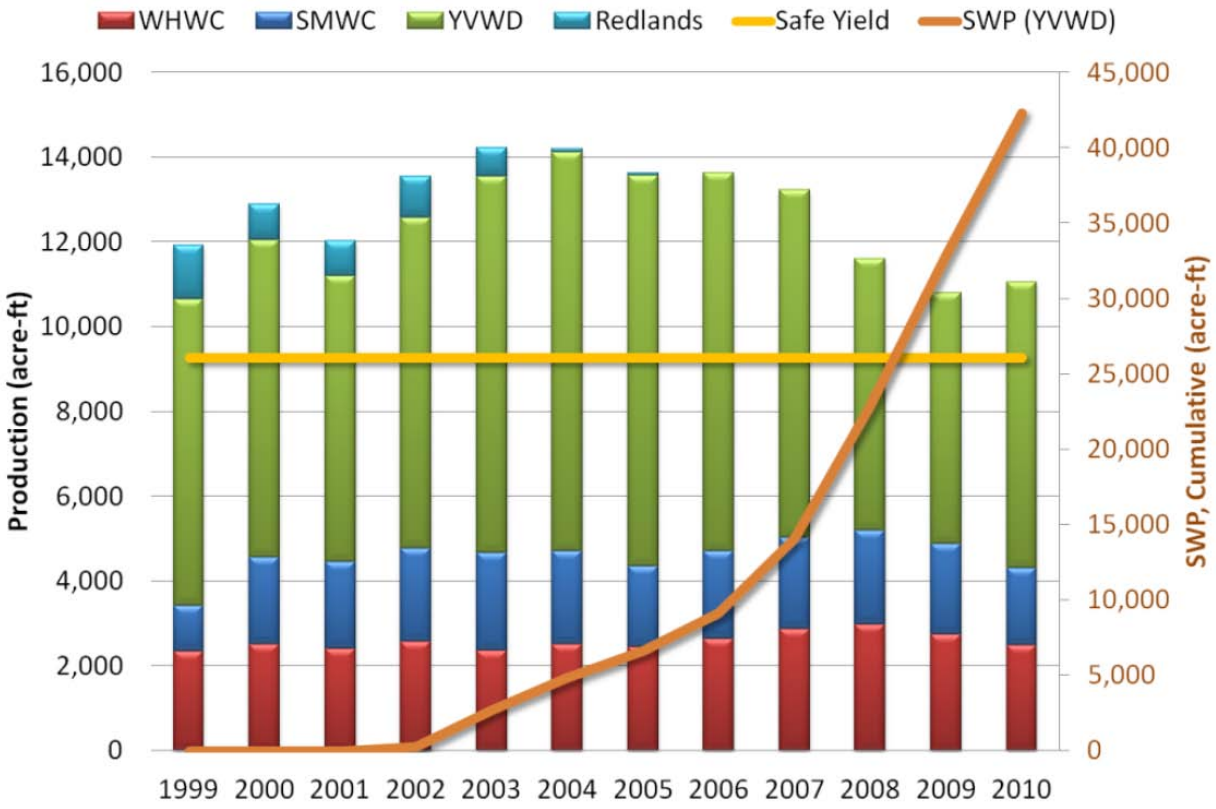
The purpose of the proposed GWMP is to provide a framework for regional groundwater management in the Basin that sustains the beneficial use of the groundwater resource. The GWMP will conform to all requirements set forth in the California Water Code section 10753 as amended by SB 1938.

Figure 5-1: Project Area



Past studies have estimated the safe yield of the basin to be between 7,000 and 10,634 acre-feet, with the average being 9,270 acre-feet. Past pumping has been between 1,000 acre-feet and 2,000 acre-feet above this estimate, as shown in Figure 5-2. This project is necessary in order to prevent further overdraft of the Yucaipa Basin.

Figure 5-2: Yucaipa Basin Production



Goals and Objectives

The primary goal is to provide a regional solution to long-term ground water overdraft that protects water quality and enhances water supply reliability for the agencies that rely on the Yucaipa Basin.

Additional project goals include:

- Preserving high quality groundwater supply for times of drought;
- minimizing the quantity of imported water use;
- Utilizing storm flows and recycled water to recharge the groundwater basin;
- Reducing the need to expand the capacity of the Yucaipa Valley Regional Water Filtration Facility (WFF), and
- Satisfying the maximum benefit commitment made to the RWQCB.

Objectives include:

- Development of a groundwater model;

- Development of a regional partnership to allow for additional basin recharge that compliments the local cities' need to retain storm flows and implement potable reuse in the future;
- Implementation of a monitoring program;
- Establishment of a data management system;
- Facilitation of regular meetings of key stakeholders to establish consensus on the contents of and implementation of a GWMP,
- Development of governance framework/agreement to implement the GWMP.

Work Items

Task 1 Public Participation

Specific work items will be undertaken by CVWD to ensure collaboration and outreach to and encourage participation by regional stakeholders and the general public.

Performance of this task will be evaluated through internal review by the District to ensure that participants in the advisory committee represent major stakeholders in the Basins. The District will also review all meeting materials prior to distribution to stakeholders to ensure quality of the material.

Subtask 1.1 Develop Advisory Committee and Identify Stakeholders

Formally establish the Regional Water Resource Coordination Committee (Committee) that will meet regularly with the goal of developing a GWMP. The Committee will include at a minimum one representative from each retail and wholesale water agency, city and county that overlies or has pumping rights in the Yucaipa Basin. The Advisory Committee will be charged with outreach to area stakeholders to be conducted during the development of the GWMP. Efforts will be made to reach all stakeholders through direct communication and advertisements.

Subtask 1.2 Advisory Committee Meetings

This task includes attendance at no less than 12 meetings of the Advisory Committee at which the following will be addressed: Advisory Committee roles and responsibilities, LGA grant obligations, GWMP requirements and goals, Basin objectives, GWMP elements, governance, finance, potential projects, project implementation, stakeholder outreach, and draft GWMP and adoption and implementation of final GWMP.

Subtask 1.3 Public Meetings

At least two public meetings will be conducted. Each will be noticed and publicized one month prior to the meeting. The public meetings will be independent of Advisory Committee meetings, as multiple entities are involved in the project. Public meetings will include the following topics:

- Public Meeting 1 – Resolution of intent to adopt a GWMP; elements and goals of the GWMP; Basin objectives; potential projects; governance; finance, and implementation
- Public Meeting 2 – Present and discuss the Draft GWMP; GWMP adoption process, and GWMP implementation.

Subtask 1.4 Dissemination of Information

The dissemination of information gained from the project will be through Advisory Committee meetings, public meetings, public notices, press releases, informational materials, and agency websites. All stakeholders will have an opportunity to review and comment on the Draft GWMP. The Final GWMP will be made available on the District website.

Task 1 Deliverables:

Agendas, handouts and meeting notes from Advisory Committee Meetings

Agendas, handouts and meeting notes from Public Meetings

Copies of public notices, informational materials, and screen-shots of relevant website information

Task 2 Data and Information Collection & Analysis

This task will involve collecting and analyzing existing data and information available regarding the Basin for the development of a data management system. Performance of this task will be evaluated by a California registered Professional Geologist for all geological information and either a Professional Geologist or Professional Engineer for non-geological information such as supply and demand data, pumping yields, and water quality data. Results of the data analysis will be presented to the RWRC Committee developed under Task 1 to allow for public comment.

Subtask 2.1 Data Collection

Necessary data and information will be collected for the GWMP. Much of the data and information collection will be available with the completion of the "Usable Capacity and Safe Yield for each Sub-Basin within the Yucaipa Basin Area Study (Yucaipa Basin Safe Yield Study)" being conducted by the SBVMWD. The study will be completed in early 2013. The study is fully funded as a line item in the SBVMWD budget. The required data and information includes:

- Sub-basin boundaries
- Groundwater levels, historical;
- Groundwater quality, historical;
- Geologic data and reports including drillers logs
- Water demand and supply, historical and projected;
- Data on usable capacity and safe yield
- Data and information on monitoring activities;
- Data and information on potential future projects;
- Information on the coordination with land use, zoning, or water management planning;
- Information on potential supply-increase or demand-reduction projects; and
- Information on monitoring.

Data sources will include:

- Urban Water Management Plans
- Department of Water Resources well log database
- Western Heights Water Company Maximum Perennial Yield Study, 2012 (to be completed)
- Gregory O. Mendez, Wesley R. Danskin, and Carmen A. Burton, 2001. Surface-Water and Ground-Water Quality in the Yucaipa Area, San Bernardino and Riverside Counties, California, 1996-98. United States Geological Survey Water-Resources Investigations Report 00-4269.
- Memorandum from Dr. John F. Mann, Jr. and Dr. David Keith Todd, January 23, 1990

- Artificial Recharge Yucaipa, California, United States Geological Survey, Joe A. Moreland, August 7, 1970.
- Agency Consumer Confidence Reports
- Agency master planning documents
- Riverside County Environmental Health records, reports, and policies, as available
- San Bernardino County Environmental Health records, reports, and policies, as available
- SBVMWD, 2013, Yucaipa Basin Safe Yield Study (to be completed in March 2013)
- Geoscience Support Services. October 3, 2011. Maximum Perennial Yield of Ground Water Basin within the Western Heights Water Company Service Area.
- Yucaipa Valley Water District. 2009-2010. Yucaipa Valley Water District Best Management Practices Coverage Report.
- United State Geological Service. June 4, 2012. Accomplishments and additional work for 2012 SBVMWD-USGS Program
- Watermaster Services. Bob Pincher. Annual Report of the Beaumont Basin Watermaster

Subtask 2.2 Input of Data into a Data Management System

Data will be integrated into a data management system. Data entered into the system will be quality controlled by comparing output to the original data for all new data, including spatial and temporal trends of water levels, ground water budget, hydraulic conductivity, and storativity values.

Subtask 2.3 Data Review

Data collected as part of the Yucaipa Basin Safe Yield Study (as noted in Subtask 2) will be reviewed for use in the GWMP. The purpose of this task is to review and document the historical and existing conditions in the Basin.

Quality assurance will entail review by a California registered Professional Geologist for all geological information and either a Professional Geologist or Professional Engineer for non-geological information such as supply and demand data, pumping yields, and water quality data.

Task 2 Deliverable:

Populated Data Management System

Task 3 Groundwater Modeling

In addition to the analysis performed under Task 2, a groundwater flow model will be developed to analyze historical, current, and future conditions in the basin.

The groundwater model will be utilized to show:

- Historical basin conditions to give a more complete assessment of the past than is available through limited historical data and
- Baseline conditions, to show how the basin would respond if current operations continued into the future.

Results will show the changes in groundwater conditions through contoured groundwater elevations and simulated hydrographs at selected locations. From these modeled conditions

and from the data collected, a groundwater budget will be developed and optimum locations for future recharge basins for the recharge of imported and recycled water will be determined.

Performance of this task will be evaluated by a California registered Professional Geologist to ensure quality of the data and results. Results of the data analysis will be presented to the RWRC Committee developed under Task 1 to allow for public comment.

Subtask 3.1 Groundwater Model Construction and Flow Model Calibration

Using the data collected under Task 2, a geologic and hydrogeologic model will be constructed placing emphasis on geologic features that may serve to compartmentalize the aquifer system into subbasins such as faults, and other geologic features that might impede groundwater flow and influence groundwater chemistry.

A flow model will be constructed based on the geologic and hydrogeologic model, and calibrated to best represent groundwater flows through the basin.

Subtask 3.2 Solute Transport Model Development and Calibration

A solute transport model will be developed to model the movement of constituents such as TDS and nitrate/nitrogen within the basin.

Subtask 3.3 Transient Predictive Scenarios

Subtask 3.3 involves developing and running simulations of groundwater model using the calibrated flow and solute transport models, and conducting tracking simulations. Particle tracking will be used for determining travel times of stormwater flows and potential aquifer recharge projects to the nearest production wells.

Subtask 3.4: Model Documentation

Model documentation will be developed that will include:

- Overview of the YGWB conceptual model,
- Detailed descriptions of the model domain, grid, and boundary conditions used for both steady-state and transient calibration,
- Summary of model input parameters,
- Description of model calibration procedures and results,
- Description of assumptions for transient predictive scenarios and results, and
- Any potential limitations of the flow and solute transport model pertaining to the appropriateness of its use as a predictive tool for assessing various types of future scenarios going forward.

Task 3 Deliverables:

Draft Model Report

Final Model Report

Task 4 Development of Objectives

Based on results from Task 1, Task 2 and Task 3, Basin Management Objectives (BMOs) and future reporting requirements will be developed or updated.

Performance of this task will be evaluated by review from the RWRC Committee to provide public comment on the ability of the objectives to support the needs of stakeholders. The Objectives will also be reviewed internally by the District to ensure it is aligned with the results of the other tasks completed as part of this project.

Basin Management Objectives will result in a more reliable supply for long-term beneficial uses of groundwater and will depend on the needs seen by area stakeholders. Basin Management Objectives are likely to include:

- Avoidance of groundwater overdraft and associated undesirable effects;
- Protection of surface water resources;
- Preservation of an affordable, reliable water supply; and
- Preservation of groundwater quality.

These objectives would be supported by management actions such as:

- Monitoring;
- Determination of basin yield;
- Development of conjunctive use projects;
- Ongoing USGS hydrogeology studies in cooperation with the San Bernardino Valley Municipal Water District.

Integration of recycled water resources;

- Public education and conservation programs;
- Well construction, abandonment, and destruction policies; and
- Identification and mitigation of soil and groundwater contamination.

Future reporting requirements will include the frequency and content of reports summarizing groundwater basin conditions and groundwater management activities (typically annual) and the frequency for re-evaluation of the GWMP itself.

The monitoring and reporting efforts will build on the current and past efforts by local agencies.

Subtask 4.1 Delineate BMO Areas and Recommend Indicator Wells

Recommendations will be developed for how to organize areas within the basin for purposes of adopting BMOs.

Available well information within each BMO area will be reviewed and recommendations provided regarding the wells that could serve as reliable BMO indicator wells. The information to be reviewed includes geologic information, well construction information, historical water levels, water quality records, and subsidence data, as available.

Subtask 4.2 Recommend/Develop BMO Approach and Criteria

Alternative BMO approaches will be examined and developed in consultation with the Advisory Committee. Once an approach is adopted, BMO criteria will be developed that are coordinated across the basin and meet the needs of the agencies. These will be presented to the Advisory Committee at one of the four scheduled meetings.

Task 4 Deliverable:

Basin Management Objectives Criteria

Task 5 Monitoring Protocols

Task 5 will standardize monitoring protocols for the Yucaipa Basin. Monitoring protocols will include type of monitoring (groundwater level or quality; surface water flow, level, or quality; subsidence) and frequency as well as, as applicable, method, location, depth, and type of well.

Existing sampling or monitoring plans will be reviewed for differences and similarities. Input from neighboring basin watermasters will be sought to standardize monitoring across the Basin.

Performance of this task will be evaluated by a Professional Geologist and/or Professional Engineer to ensure that the monitoring protocols developed meet general industry standards to ensure that quality data is generated for later use in development of annual reports for the Basin. The Monitoring Protocols will be made available to the RWRC Committee for public comment.

Monitoring protocols will be included in the GWMP and will include:

- Data needs,
- Recommended monitoring site locations,
- Sampling frequency,
- Sampling protocols,
- Constituents, and
- An archival and reporting strategy utilizing the Data Management System.

Task 5 Deliverable:

Yucaipa Basin Monitoring Protocols

Task 6 Development of Governance Plan

A governance plan will be developed to set up a cooperative system of managing groundwater in the Yucaipa Basin. The method of governance will be defined by the stakeholders through the meetings taking place as part of Subtask 1.2. Governance may require a Memorandum of Understanding or a Joint Powers Authority. A Board of Directors may need to be formed with representatives from stakeholders to guide the implementation of the GWMP. Details describing the Board may include:

- Composition
- Term of office
- Meetings
- Removal and replacement
- Voting
- Rules and regulations
- Technical oversight
- Financial responsibilities

Performance of this task will be evaluated through review of the Governance Plan by the RWRC Committee. The RWRC Committee will be involved in the development of each piece of the Governance Plan, ensuring that it meets the needs of each stakeholder. The Governance Plan

will also be reviewed internally by the District to ensure it is aligned with the results of the other tasks completed as part of this project.

Task 6 Deliverable:

Governance Plan for the Yucaipa Basin

Task 7 Development of Financial Plan

The financial plan will be developed based on the governance method selected by stakeholders in Task 7. The financial plan will outline, to the extent desired by the stakeholders:

- Budget,
- Ownership,
- Assessments, and/or other
- Financial information required by the stakeholders.

Performance of this task will be evaluated through the review of the Financial Plan by the RWRC Committee. Comments will be incorporated into the Plan to ensure it meets the needs of stakeholders. The Financial Plan will also be reviewed internally by the District to ensure it is aligned with the results of the other tasks completed as part of this project.

Task 7 Deliverable:

Financial Plan

Task 8 Development of GWMP Document

The GWMP document will be developed in Task 8. Performance of this task will be evaluated through the following:

- A Draft GWMP will be reviewed by the RWRC Committee, the Regional Infrastructure and Project Coordination (RIPC), and the Upper Watershed Collaborative Partnership (Partnership). The Committee will review sections of GWMP throughout the process with the goal of reaching consensus on each element.
- A Draft Final Report will be distributed to DWR for comments prior to submittal of the final GWMP.
- A Draft GWMP will be made available to the public for review and comment. The District will be responsible for incorporating comments, when appropriate. The RWRC Committee will approve final modifications of the document.

Subtask 8.1 Develop Draft Document

A Draft GWMP will be developed based on the results from Tasks 1-7 above. The Draft GWMP will be distributed electronically on CD to the advisory committee and made available to the public via agency web pages or other appropriate means. The draft GWMP will be based on sound hydrogeologic principles and will be designed to increase knowledge of basin characteristics and improve groundwater management. The format and layout of the document will be guided by stakeholders, but will include all components of groundwater management as

identified in Water Code Section 10795 et. Seq. 10753.7, and those items developed in accord with the Budget Act of 1999. A tentative Table of Contents is provided on the following page.

Subtask 8.2 Develop Final Document

A Final GWMP will be developed based on comments received on the draft document developed in Subtask 8.1. The document will be adopted by Yucaipa Valley Water District, Western Heights Water Company, South Mesa Water Company, and the City of Redlands.

Task 8 Deliverables:

Draft GWMP Document

Final GWMP Document

Task 9 Project Management and Coordination

The project manager will direct the technical activities of the consultant team subject to overall direction provided by the Advisory Committee. This will encompass overall technical direction of the work effort, review of all deliverables work products, handling of communications with Yucaipa Basin agencies, scheduling of project meetings and conference calls, and fiscal administration of the project. Performance of this task will be evaluated internally by the District through review of monthly progress reports. The RWRC Committee will oversee YVWD to assure compliance with required DWR procedures.

Subtask 9.1 Coordination with stakeholders

Yucaipa Valley Water District will coordinate with other stakeholders to ensure the project purpose is met with full participation.

Subask 9.2 Monthly Progress Reports

Monthly progress reports will be developed by Yucaipa Valley Water District to inform the stakeholders on progress and accomplishments and the status of budget and schedule. These reports will be used in the preparation of Quarterly Reports to DWR under Task 10.2.

Task 9 Deliverables:

Monthly progress reports

Task 10 Administration

Subtask 10.1 Develop and Administer Contracts

Development and administration of contracts with DWR will be conducted by Yucaipa Valley Water District. No grant funding will be spent on contract administration.

Task 10.2 Development of Quarterly and Final Reports

Development and submittal of quarterly reports to DWR will be conducted by Yucaipa Valley Water District. No grant funding will be spent on quarterly reports. The Final Report will be submitted to DWR at the conclusion of the project

Task 10.3 Coordination with DWR

Coordination with DWR project manager on progress and unanticipated activities will be conducted by Yucaipa Valley Water District.

Performance of this task will be evaluated though internal review of quarterly and final by the District. Quarterly and final reports will also be made available to the RWRC Committee for review. The RWRC Committee will oversee YVWD to assure compliance with required DWR procedures.

Task 10 Deliverables:

Quarterly Reports

Final Report

Environmental Compliance and Permitting

The proposed GWMP is a planning study that is statutorily exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines section 15262. No permits are required.

Property Access

This project is not expected to require access to private property.

Progress and Performance Evaluation

Progress and performance of the project will be evaluated regularly. Quarterly reports will be prepared and provided to DWR to show the details of:

- Work performed;
- Major accomplishments;
- Issues or concerns that may affect the schedule or budget;
- Activities planned for the next period;
- Budget status information; and
- Schedule information.

Public meetings and meetings of the advisory committee will help evaluate progress and performance. These meetings, as outlined in the Work Plan, represent milestones in the development of the GWMP.

Critical milestones in the project include:

- Identification and participation of stakeholders: Project performance will be based on the ability to locate and engage stakeholders in the development of the groundwater management plan.
- Agreement on goals and basin management objectives: Project performance will be based on the ability to gain consensus on goals and BMOs for the basin

- Agreement on governance and finance plan: Project performance will be based on the ability to gain consensus on goals and BMOs for the basin
- Completion of GWMP: Project performance will be based on the ability to complete a draft and final GWMP that meets all state requirements and all items detailed in this application.